

## CLAIMS

It is claimed:

1. In a network communicatively linking a host computer, a server computer, and a plurality of client computers, a communication connection management system comprising:

a communication connection pool configured to maintain in addition to communication connections through the network between the host computer and the server computer being used by client computers to access the host computer through the server computer, communication connections between the host computer and the server computer unused but available for use by the client computers to access the host computer through the server computer;

a communication connection initiator configured to create the communication connections between the server computer and the host computer; and

a communication connection pool manager configured to direct the communication connection initiator to create a first number of communication connections to be added to any unused available communication connections in the communication connection pool when the number of unused available communication connections is below a second number.

2. The communication connection management system of claim 1 wherein the communication connections are based upon one or more protocols consisting of TCP/IP, TN3270, TN3270E, TN5250, and Telnet.

3. The communication connection management system of claim 1 wherein the client computers are configured to request access to the host computer to obtain business data and the host computer is configured to retrieve business data based upon requests from the client computers.



connection initiator to terminate a portion of the unused available communication connections when the number of unused available communication connections in the communication connection pool exceeds a third number.

14. In a network communicatively linking a plurality of host computers, a plurality of server computers, and a plurality of client computers, a communication connection management system comprising:

at least one communication connection pool configured to maintain in addition to communication connections through the network between the host computers and the server computers being used by client computers to access the host computers through the server computers, communication connections between the host computers and the server computers unused but available for use by the client computers to access the host computers through the server computers;

at least one communication connection initiator configured to create the communication connections between the server computers and the host computers; and

at least one communication connection pool manager configured to direct the one or more communication connection initiators to create a first number of communication connections to be added to any unused available communication connections in each of the one or more communication connection pools when the number of unused available communication connections in each of the one or more communication connection pools is below a second number.

15. The communication connection management system of claim 14 wherein the one or more communication connector pool managers are configured to determine at least one of the first number and the second number based upon historical traffic data of requests from the client computers for access to the host computers.

16. The communication connection management system of claim 14 wherein the first number is an increment.

17. The communication connection management system of claim 16 wherein the second number is the product of the first number multiplied by a load factor.

18. In a network communicatively linking a host computer, a server computer, and a plurality of client computers, a screen object management system comprising:

a screen object pool configured to run on the server computer to contain available screen objects associated with communication connections between the server computer and the host computer to be available for use by the client computers to access the host computer through the server computer;

a ScreenFactory class configured to create the screen objects with the associated communication connections between the server computer and the host computer to provide access to the client computers to at least one of data and services of the host computer; and

a screen pool manager configured to determine if the number of unused available screen objects is below a first number, and if so, the screen pool manager being configured to direct the ScreenFactory class to create a second number of screen objects to be added to the unused available screen objects in the screen object pool.

19. The screen object management system of claim 18 wherein the communication connections are based upon one or more protocols selected from a group consisting of TCP/IP, TN3270, TN5250, and Telnet.

20. The screen object management system of claim 18 wherein the screen pool manager is configured to determine the first number and second number based in part upon levels of past requests from the client computers for access to the host computer through the server computer.

21. The screen object management system of claim 18 wherein the screen object pool, ScreenFactory class, and the screen pool manager are configured to run on the server computer.

22. The screen object management system of claim 18 wherein the second number is an increment.

23. The screen object management system of claim 18 wherein the first number is the product of the increment multiplied by a load factor.

24. The screen object management system of claim 18 wherein the increment is an integer, and the load factor is greater than zero and less than or equal to one.

25. In a network communicatively connecting a host computer, a server computer, and a plurality of client computers, a method for managing communication connections comprising:

maintaining a pool of available communication connections between the host computer and the server computer to be available for use by the client computers that request communication connections to access the host computer through the server computer;

determining the number of available communication connections in the pool available for future requests;

determining if the number of available communication connections in the pool available for future requests is at least at a desired amount of available communication connections greater than zero; and

increasing the number of available communication connections in the pool available for future requests if the number of available communication connections in the pool available for future requests is at or below the desired amount.

26. The method of claim 25 wherein the desired amount is a first number and the number of available communication connections are increased by using a second number as the amount of increase.

27. The method of claim 26, further including using operations research and queueing theory applied to historical traffic data of requests from the client computers for access to the host computer to determine at least one of the first number and the second number.

28. The method of claim 26 wherein the number of available communication connections are increased using an increment for the second number.

29. The method of claim 28 wherein the first number for the desired amount is a product of the increment value multiplied by a load factor.

30. The method of claim 29 wherein the number of available communication connections are increased by the second number using an integer as the increment value and the desired amount is determined with the first number using the load factor as being greater than zero and less than or equal to one.

31. The method of claim 25, further including decreasing the number of available communication connections in the pool available for future requests if the number of available communication connections in the pool available for future requests is at or above a predetermined amount.

32. In a network communicatively connecting a plurality of host computers, a plurality of server computers, and a plurality of client computers, a method for managing communication connections comprising:

maintaining at least one pool of available communication connections between the host computers and the server computers to be available for use by the client computers that request communication connections to access the host computers through the server computers;

determining the number of available communication connections in the pool available for future requests;



increasing the number of available screen objects in the pool available for future requests if the number of available screen objects in the pool available for future requests is at or below the desired amount.

37. The method of claim 36 wherein the desired amount is a first number and the number of available screen objects are increased by a second number as the amount of the increase.

38. The method of claim 37, further comprising determining at least one of the first number and the second number based at least in part upon levels of past requests from the client computers for access to the host computer through the server computer.

39. The method of claim 37 wherein the second number is an increment.

40. The method of claim 39 wherein the first number is the product of the increment multiplied by a load factor.

41. The method of claim 40 wherein the increment is an integer and the load factor is greater than zero and less than or equal to one.